IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Customer Number: 46320
	:	
Frank LEYMANN, et al.	:	Confirmation Number: 5078
	:	
Application No.: 10/042,799	:	Group Art Unit: 2157
	:	
Filed: January 9, 2002	:	Examiner: A. Gold
	:	

For: MANAGING A FAILURE TO ACCESS A DATABASE IN A COMPUTER SYSTEM

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This Appeal Brief is submitted in support of the Notice of Appeal filed May 15, 2006,

and in response to the Pre-Appeal Brief Conference decision dated June 7, 2006, and in response

to the Notice of Non-Compliant Appeal Brief dated August 2, 2006, wherein Appellants appeal

from the Examiner's rejection of claims 1-14.

I. REAL PARTY IN INTEREST

This application is assigned to IBM Corporation by assignment recorded on January 9,

2002, at Reel 012497, Frame 0053.

II. RELATED APPEALS AND INTERFERENCES

Appellants are unaware of any related appeals and interferences.

III. STATUS OF CLAIMS

Claims 1-14 are pending in this Application and have been finally rejected. It is from the final rejections of claims 1-14 that this Appeal is taken.

IV. STATUS OF AMENDMENTS

The claims have not been amended subsequent to the imposition of the Final Office Action dated February 13, 2006.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claims 1, 7, and 11 are respectively directed to a method, system, and method for managing a failure to access a database in a computer system. Referring to Figure 1 and generally to pages 5 and 6 of Appellants' disclosure, a computer system includes at least one application client 14, 15, 16 (page 5, line 3 of Appellants' disclosure); at least two application servers 20, 21 that are suitable to process requests of the application clients 14, 15, 16 (page 5, lines 16-19); and a database 26 accessible by the two application servers 20, 21 (page 5, lines 20-21). During operation, a first application server 21 may be recognized as failing to access the database 26 (page 6, lines 8-10). Referring to Figure 2, when a request is sent from an application client 15 to the first application server 21 (i.e., the server that fails to access the database 26), the request is sent from the first application server 21 to the second application server 20 while the first application server 21 fails to access the database 26 (page 7, lines 9-18). The request is then processed by the second application server 20, and the response is sent from the second application server 20 to the first application server 21 (page 7, lines 19-25), which can send the response back to the requesting application client without the requesting application

client recognizing that the first application server 21 cannot access the database 26 (page 8, lines 1-9). Thus, the failure is transparent to the requesting application client.

Referring to independent claim 7, a computer system includes at least two application servers 20, 21 which are suitable to process requests of at least one application client 15 (page 5, lines 16-19) and a database 26 accessible by the application servers 20, 21 (page 5, lines 20-21). Independent claim 7 further recites "means for recognising that the first one of the two application servers (21) fails to access the database (26)," and this feature finds support on page 6, lines 8-16 and in features 20, 21, 22 shown in Fig. 1. Independent claim 7 also recites "means for sending a request of the application client (15) for the first application servers (21) from the first application server (21) to the second application server (20) while the first one of the two application servers (20, 21) fails to access the database," and this feature finds support on page 7, lines 9-18 and in feature 21 shown in Fig. 2. Independent claim 7 additionally recites "means for processing the request by the second application server (20)," which is disclosed by second application server 20 shown in Fig. 2 and described in page 7, line 19 through page 8, line 9. Independent claim 7 still further recites "means for sending a response to the request from the second application server (20) to the first application server (21)," which also disclosed by second application server 20 shown in Fig. 2 and described in page 7, line 19 through page 8, line 9.

Referring to Figure 2 and independent claim 11, a method of operating a computer system includes the step of detecting that a first of the application servers fails to access the database (page 7, lines 1-3). A request is received by a first application server from the application client to the first application server (30; page 7, lines 9-11). The request is received by a second of the application servers from the first application server while the first application

server fails to access the database (32; page 7, lines 14-18), and the request is processed by the second application server to generate a response (33; page 7, lines 19-22). The response from the second application server is received by the first application server (34, page 7, line 23 through page 8, line 1), and the response is forwarded to the application client by the first application server (37; page 8, lines 6-9).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1-14 were rejected under 35 U.S.C. § 103 for obviousness based upon Holmberg et al., U.S. Patent No. 6,247,141 (hereinafter Holmberg), in view of Rizvi et al., U.S. Patent No. 6,490,610 (hereinafter Rizvi).

VII. ARGUMENT

THE REJECTION OF CLAIMS 1-14 UNDER 35 U.S.C. § 103 FOR OBVIOUSNESS BASED UPON HOLMBERG IN VIE OF RIZVI

For convenience of the Honorable Board in addressing the rejections, claims 2-6 stand or fall together with independent claim 1, claims 8 and 9 stand or fall together with independent claim 7, and claims 12-14 stand or fall together with independent claim 11.

Claim 1

In the Amendment filed November 4, 2005, Appellants amended independent claims 1 and 7 to clarify that the step of sending a request from a first application server to a second application server occurs while the first application server fails to access a database. Appellants also argued that this feature is neither taught nor suggested by Holmberg and Rizvi, either alone or in combination. Additionally, Appellants presented arguments on pages 6-8 of the Amendment,

which conclude that "<u>even if</u> Holmberg were modified in view of Rizvi, the claimed invention would not result" (emphasis in original). Appellants also added claims 11-14.

Despite Appellants arguments to the contrary, in the Final Office Action dated February 13, 2006, the Examiner again rejected claims 1-10 (and additionally claims 11-14) under 35 U.S.C. § 103 for obviousness based upon Holmberg in view of Rizvi.

Appellants have compared the Examiner's statement of the rejection for independent claims 1 and 7 in the second Office Action dated August 12, 2005 (i.e., the paragraph spanning pages 2 and 3 and the first 3 full paragraphs on page 3) with the statement of the rejection for independent claims 1, 7, and 11 in the third Office Action (i.e., the paragraph spanning pages 2 and 3 and the first 3 full paragraphs on page 3). The result of this comparison is that besides the third Office Action referring to newly added claim 11, the <u>only difference</u> between these statements of rejection is that the third Office Action includes the phrase "while the first one of the two application servers (20, 21) fails to access the database." This phrase is identical to a phrase added to claim 1 in the Amendment filed November 4, 2005.

Therefore, despite the Appellants arguments on pages 6-8 of the Amendment that Holmberg and Rizvi, either alone or in combination, fail to teach the limitation "while the first one of the two application servers (20, 21) fails to access the database," the Examiner has responded to these extensive arguments by simply asserting that that this limitation is disclosed by Holmberg <u>without any comment or analysis</u>.

In the statement of the rejection, the Examiner cites column 3, lines 5-22 of Holmberg to teach the following phrase in claim 1:

> sending a request of the application client (15) for the first application server (21) from the first application server (21) to the second application server (20) while the first one of the two application servers (20, 21) fails to access the database.

For ease of reference, column 3, lines 5-22 of Holmberg is reproduced below:

> FIG. 1 is a block diagram that illustrates the use of redundant servers in a client-server application. In particular, a plurality of client applications, C, are shown. A primary server, S 101, runs on a first processor 103. A second processor 105, which is separate from the first processor 103, runs a backup server, S' 107, in parallel with the primary server S 101. Overall, so that when one fails, the other can take over without any client application C noticing the problem, the primary server S 101 and the backup server S' 107 should have the same internal state at a virtual time, T, that occurs after processing any specific request from the client application C. (Since the backup server S' 107 trails the primary server S 101, the backup server S' 107 reaches the virtual time later in real time than the primary server S 101 does.) The existence of replicated server processes should not be visible to the client applications C using the server. In order to implement such a strategy, the following problems need to be solved:

As noted above, the Examiner has failed to explain why the Examiner believes the Holmberg teaches or suggests the limitation " sending a request of the application client (15) for the first application server (21) from the first application server (21) to the second application server (20) while the first one of the two application servers (20, 21) fails to access the database" (emphasis added). In so doing, the Examiner has failed to meet the requirements of 37 C.F.R. § 1.104(c), which reads:

> In rejecting claims for want of novelty or for obviousness, the examiner must cite the best references at his or her command. When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified.

Despite these requirements, the Examiner's statement of the rejection simply consists of the Examiner repeating, almost word-for-word, each of the recited claims and asserting that the

entire claim is disclosed by certain specified passages within reference. The manner in which the Examiner conveyed the statement of the rejection, however, has not "designated as nearly as practicable" the <u>particular</u> <u>parts</u> in reference being relied upon in the rejection.

Not only has the Examiner established a sufficient factual basis to support the Examiner's assertion that Holmberg discloses the above-identified limitations, a review of the Examiner's asserted combination of Holmberg and Rizvi fails to yield these limitations.

Holmberg teaches forwarding a queue in a protocol stack 215 of a primary server S 101 via a backup path 209 to a protocol stack 215' of a backup server S' 107 (see column 6, lines 10-18). However, this occurs only when the primary server S 101 is operational. When the primary server S 101 fails, the backup server S' 107 takes over execution (see column 6, lines 19-43). The "failure" contemplated by Holmberg is a "Primary Server Crash" (see column 7, lines 20-35); and thus, the primary server S 101 of Holmberg is incapable of forwarding data to the backup server S' 107 after a failure has been recognized, as recited in the claims, since the primary server S 101 has crashed.

The secondary reference of Rizvi does not cure the above-identified deficiency of Holmberg. Instead, when a failure occurs, Rizvi uses a methodology similar to the methodology taught by Holmberg. Rizvi teaches that a client driver interface 204 detects the failure of a database session 218 (column 4, lines 33-51). Upon the failure being detected, an "automatic failover" occurs (column 4, lines 52-53), in which "a new database session [is created] by

reconnecting the client to an active database server" (column 3, lines 33-53; column 4, line 66 though column 5, line 3).

In both Holmberg and Rizvi a new primary server (Holmberg) or new database server (Rizvi) is selected in place of the original server, and after failure, the client communicates with the new server ("[t]he backup server S' 107 takes over execution … and starts receiving requests from the clients C;" column 6, lines 41-43 of Holmberg)("client driver interface 204 automatically connects to database server 210 creating database session 220;" column 5, lines 4-11). However, Holmberg and Rizvi, either alone or in combination, fail to teach or suggest that the first application server (i.e., the server that fails) sends a request from the application client to the second application server <u>while</u> (i.e., at the same time) the first application server fails to access the database. Therefore, <u>even if</u> Holmberg were modified in view of Rizvi, the claimed invention would not result.

<u>Claims 7 and 11</u>

Appellants further note that although independent claims 7 and 11 contain similar limitations to those limitations recited in independent claim 1. For example, claim 7 also recites "sending a request of the application client (15) for the first application servers (21) from the first application server (21) to the second application server (20) while the first one of the two application servers (20, 21) fails to access the database," which is comparable to the limitation found in claim 1, which Appellants have argued is not taught or suggested by the combination of Holmberg and Rizvi. Claim 11, similarly, recites "receiving, by a second of the application

servers, the request from the first application server while the first application server fails to access the database." Thus, independent claims 7 and 11 are also not taught or suggested by the combination of Holmberg and Rizvi for the same reasons previously presented with regard to claim 1.

Notwithstanding that the combination of Holmberg and Rizvi fails to teach or suggest the limitations recited in independent claims 7 and 11 that are comparable to the limitations recited in claim 1, independent claims 7 and 11 are not identical to independent claim 1. Whereas claim 1 is directed to a method, claim 7 is directed to a computer system, and the methods recited in claims 1 and 11 are substantially different. The Examiner, however, has not recognized these differences in the statement of the rejection since the Examiner's comments in the statement of the rejection only refer to the limitations recited in claim 1. Thus, the Examiner has failed to establish a prima facie case of obviousness in rejecting claims 7 and 11 since the Examiner has failed to establish that the combination of Holmberg and Rizvi teaches or suggests all of the claimed limitations.

Conclusion

Based upon the foregoing, Appellants respectfully submit that the Examiner's rejections under 35 U.S.C. § 103 for obviousness based upon the applied prior art is not viable. Appellants, therefore, respectfully solicit the Honorable Board to reverse the Examiner's rejections under 35 U.S.C. § 103.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due under 37 C.F.R. §§ 1.17, 41.20, and in connection with the filing of this paper, including extension of time fees, to Deposit Account 09-0461, and please credit any excess fees to such deposit account.

Date: August 14, 2006   Respectfully submitted,

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VIII. CLAIMS APPENDIX

1. Method of operating a computer system, wherein said computer system comprises at least one application client (15), at least two application servers (20, 21) which are suitable to process requests of the application clients (15), and a database (26) accessible by the two application servers (20, 21), and wherein said method comprises the steps of:

recognising that the first one of the two application servers (20, 21) fails to access the database (26),

sending a request of the application client (15) for the first application server (21) from the first application server (21) to the second application server (20) while the first one of the two application servers (20, 21) fails to access the database,

processing the request by the second application server (20), and

sending a response to the request from the second application server (20) to the first application server (21).

2. Method of claim 1 comprising the further step of sending the response from the second application server (20) to an input queue (24) of the first application server (21).

3. Method of claim 2 comprising the further step of putting, by the first application server (21), the response from the input queue (24) to an output queue (27) of the first application server (21).

4.   Method of claim 1 comprising the further step of sending the response from the second application server (20) to an output queue (27) of the first application server (21).

5.   Method of one of claims 3 or 4 comprising the further step of sending the response from the output queue (27) to the application client (15).

6.   Computer program or computer program product which is suitable to perform the method of one of claims 1 to 4 [[5]] when it is loaded into a computer system.

7.   Computer system comprising

at least two application servers (20, 21) which are suitable to process requests of at least one application client (15),

a database (26) accessible by the application servers (20, 21),

means for recognising that the first one of the two application servers (21) fails to access the database (26),

means for sending a request of the application client (15) for the first application servers (21) from the first application server (21) to the second application server (20) while the first one of the two application servers (20, 21) fails to access the database,

means for processing the request by the second application server (20), and

means for sending a response to the request from the second application server (20) to the first application server (21).

8. Computer system of claim 7 further comprising an input queue (24) corresponding to the first application server (21).

9. Computer system of claim 7 or 8 further comprising an output queue (27) corresponding to the first application server (21).

10. Computer system of one of claims 7 to 8 wherein the at least two application servers (20, 21) process requests from a number of application clients (14, 15, 16).

11. A method of operating a computer system, wherein the computer system comprises an application client, application servers configured to process requests of the application client, and a database accessible by the application servers, and wherein the method comprises the steps of:

detecting that a first of the application servers fails to access the database;

receiving, by the first application server, a request from the application client to the first application server;

receiving, by a second of the application servers, the request from the first application server while the first application server fails to access the database;

processing, by the second application server, the request to generate a response;

receiving, by the first application server, the response from the second application server; and

forwarding, by the first application server, the response to the application client.

12. The method of claim 11, further comprising the step of receiving, from the second application server, the response into an input queue of the first application server.

13. The method of claim 12, further comprising the step of transferring the response from the input queue of the first application server to an output queue of the first application server.

14. The method of claim 11, further comprising the step of receiving, from the second application server, the response into an output queue of the first application server.

IX. EVIDENCE APPENDIX

No evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 of this title or of any other evidence entered by the Examiner has been relied upon by Appellants in this Appeal, and thus no evidence is attached hereto.

X. RELATED PROCEEDINGS APPENDIX

Since Appellants are unaware of any related appeals and interferences, no decision rendered by a court or the Board is attached hereto.